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Book Review

O. TEICHMÜLLER. *Collected Papers*, Springer, 1982, 751 pp.

Teichmüller was one of the mathematical geniuses of the Twentieth Century. He was also a very unpleasant person, and few would agree with his political views. His mathematical papers still make fascinating reading fifty years later. It is discouraging to note time and again how talent for mathematics is independent of moral worth. We would like to be able to say that a great mathematician is also a great man, as he ought to be. But reality is seldom what it ought to be, and the private lives of the great mathematicians would make an interesting gallery of horrors. Fortunately, we have biographers whose job is to present the life that ought to have been, and to allow us to forget reality without regrets.

SERGE LANG. *Cyclotomic Fields*, Springer, 1978, 253 pp; *Cyclotomic Fields. II*, 1980, 164 pp.; *Introduction to Modular Forms*, 1976, 259 pp.

Some day, when we are all gone, one name will be remembered and revered, that of Serge Lang. He has realized that mathematics cannot survive without the synthetic view that pulls disparate threads together and gives the big picture. With his expositions of fields that nobody would otherwise write up, he has done more for the advancement of mathematics than anyone now alive. In so doing, he has met the fatuous criticism of those who are wedded to the "one-shot" views of mathematics. According to this view, mathematics would consist of a succession of targets, called problems, which mathematicians would be engaged in shooting down by well-aimed shots. But where do problems come from, and what are they for? If the problems of mathematics were not instrumental in revealing a broader truth, then they would be indistinguishable from chess problems or from crossword puzzles. Mathematical problems are worked upon because they are pieces of a larger puzzle. The solution of individual problems is valuable only insofar as it serves to build a theory. But it takes cultivation to see all this, a rare commodity in our day.

U. GRENANDER. *Pattern Synthesis*, Springer, 1976, 509 pp.; *Pattern Analysis*, 1978, 605 pp. *Regular Structures*, 1981, 569 pp.

Pattern recognition is big business today, and big money. Too bad that none of the self-styled specialists in the subject—let us charitably admit it *is* a subject—do not know any mathematics, even those who know how to read and write. Together with the joy of reading a deep treatise written by a real mathematician, goes the sadness of knowing that few of the people who need this mathematics the most, will be aware of it.

N. N. VOROB'EV. *Game Theory*, Springer, 1977, 178 pp.

One would not expect a noncapitalist society like the Soviet Union to delight in that distilled essence of capitalism that is game theory. Yet, some of the best work in the subject comes from the Soviet Union. Closet capitalists?

I. S. IOHVIDOV. *Hankel and Toeplitz Matrices and Forms*, Birkhaüser, Basel, 1982, 231 pp.

The best expository writing comes from the Soviet Union. None of the basic facts contained in this useful survey could be found easily in a book published in the West. Ponderous treatises have been written which contain the same material at a level of generality that make the facts accessible only to those who do not need to learn them. When shall we ever learn to write for the nonspecialist?

GIAN-CARLO ROTA
Department of Mathematics,
Massachusetts Institute Technology,
Cambridge, Massachusetts 02130

0001-8708/83 $7.50